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Patoka Valley PLTW Regional Partnership

Saturday, February 20, 2010

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Pike Central HS PLTW

Petersburg, IN

Contents

Newsletter Info

Follow the Hybrid HMMWV project at http://humveeproject.blogspot.com/

Editor – Scott Willis

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Check out the Pike Central Academic Spotlight page at;

http://www.pcsc.k12.in.us/pchs/academic_spotlight.htm

News articles by engineering students about engineering students.

Where you can find all of the issues of the newsletter, other information about Pike Centrals PLTW projects, and other Pike Central academic efforts.

All of the PC Perspective articles are written by Pike Central High School students enrolled in the Project Lead The Way classes and are submitted to the Pike County Press Dispatch for publication in the local paper.

PC Robotics Camp
By: Scott Willis

The Pike Central Robotics Camp held during the holiday break on 28 and 29 of December was a big hit. Over the two one day camps a total of 50 students from 6 area schools and their teachers were given basic embedded programming training using RobotC.

Some of the students and educators from the 2nd day of camp

The students were from Jasper HS, NE Dubois HS, East Gibson MS, SE Dubois, North Posey, and Pike Central.

The range of students were from 7th grade through 12th grade. Some of the older students found the programming videos a bit boring but overall the comments from the evaluation forms showed the students and educators that attended found the one day course very helpful and fun.

RobotC is an Integrated Development Environment (IDE) that allows programming of the LEGO MINDSTORMS – NXT robotics kit in a C like programming language. The C language is used quite extensively in industry for programming various devices with embedded processors from cell phones to engine controllers for heavy equipment.

During the afternoon of the course, the students programmed a basic robot for line following and a short competition was held to see what team of one or two students could complete the line following course the quickest.

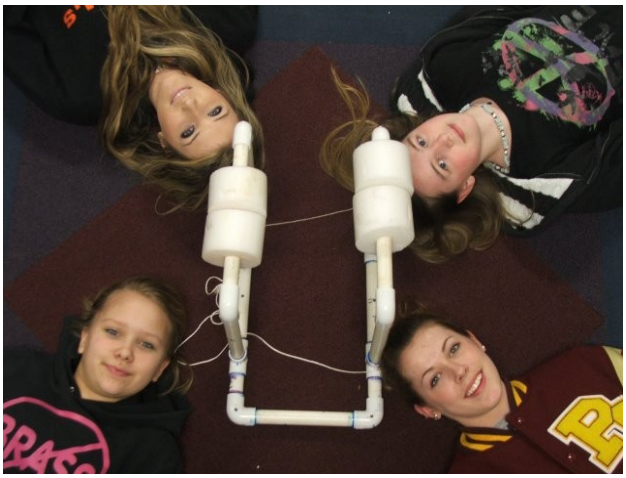
Robotics is one of the best ways to capture students interest and to encourage them to pursue STEM related education and carrier paths.

Middle school-er from East Gibson testing his robot.

The camp was put on by Pike Central's Ray Niehaus, NSWC, Crane Division's Scott Willis with the assistance from and much thanks to following; Donna Taylor Bouchie from Southwest Indiana Network for Education who helped with lunch and also provided USB memory sticks to the students, Jim Heck from Grow Southwest Indiana Workforce Board provided funding to support the effort as well as Glenn Weil, Coordinator of Career & Technical Education Services and Brian West, Dean of Technology at IVY-Tech Evansville, was on hand with T-shirts for the students as well. Thank you also goes to the Pike Central IT department in helping get the computers set up for the activity as well as the Pike County School Corp. for the use of the facilities.

Day 2 – Students from North Posey, SE Dubois, and Pike Central busy working on robots.

PC Perspective: SEAPEARCH - ROV
By: Anna Woolery



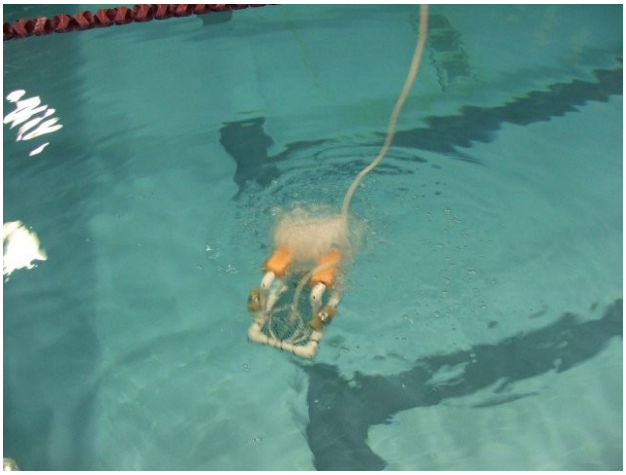
Clockwise from lower left; Anna, BreAnn, Jazzlyn, and Emily with their Open Class Sea Pearch.

Pike Central High School's fourth period Principles of Engineering (POE) class along with two Introduction of Engineering and Design (IED) classes are constructing three Underwater Remote Operated Vehicles (ROV). These classes are all part of the Project Lead the Way courses at Pike Central. On the POE class team is Anna Woolery, Jazzlyn Kulm, Emily Burns, and BreAnn Lane. One of the IED teams members are Isaiah Hagemeyer, Christian Wilson, Tabatha Julian, and Ben Cox. The other team has freshmen Miranda Merter, Zacharie Riddle, Jacob Lamberson, as well as sophomore Nick Gentry. An Underwater ROV, also known as a Sea Perch, is a motor operated vehicles made out of PVC pipe. The purpose of a Sea Perch is to explore underwater areas. Each team received a book of instructions on how to build, wire, and operate the Sea Perch. There are three motors attached to the back of the ROV and are operated by a grounded control system. The motors are about 3-4 inches long and have the diameter of about 1 inch. They are encased in a film canister filled with wax to water proof the motors.

For a few days we worked on research and pipe cutting. After assembling our Sea Perch's we discussed what options we would have to improve the ROVs. One option all the teams have looked at is to add a camera and lights. The only obstacles we have with the additions are wiring and power needed.

Since wiring is a big issue we have decided to look into tethering and blue tooth. Tethering is a wire that is connected to the Sea Perch and extends to the top of the water and sends signals back to the computer. We have considered blue tooth but that would put a restraint on the distance we could go. Also, we have considered Wi-Fi but the cost is more although there isn't a distance issue.

Within the teams there is discussion of different applications their Sea Perch's can be used for and all the teams have different ideas on new improvements. All the Sea Perch teams are planning to enter a competition on May 1st, though we are not completely finished with the ROV.



Sea Perch testing in pool at Pike Central

Patoka Valley PLTW Regional Partnership Meeting
By: Scott Willis

The latest meeting of the Patoka Valley PLTW Partnership was held on Thursday 18 February at Southridge High School. The primary focus of the meeting was for the area high school PLTW students to show and discusses their various projects and classroom efforts.

Four Pike Central students, CM Brown, Caleb Daniel, Richard Newkirk, and James Saunders were present to display and discuss the robotic lawn mower joint effort with IVY Tech, robotic marble sorter, Thermin Radio Frequency musical instrument, NXT/Tetrix electronic guitar, and other projects.

Other schools represented by students were Jasper HS, Northeast Dubois, Southeast Dubois, Southwest Dubois, and Perry Central.

I am a bit disappointed in the showing of support from the Dubois County business partners at the recent meeting. Of the 11 people there listed as "Business/Industry Partners", 7 were from outside of Dubois County. With the event being hosted by a Dubois school and students from all 4 Dubois high schools presenting projects. Even though some of you are reluctant to come to Pike County for the meetings held here, this was in Dubois County with most of the students presenting from Dubois.

Come on you East Pikers, you can do better than this. ;-)

February 18th,2010 minutes Thanks to Southridge for Hosting

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Upcoming Events

Feb 27th,2010 – Vex RC robotics contest at Ivy Tech in Evansville,IN

April 7th,2010 – Introduction to Engineering Design (IED) CONTEST at Jasper High School

April 14,2010 – Crane Team Science Fair

April 25-26th,2010 – Super mileage contest at O'Reilly Raceway park in Indianapolis